

by reason of their antiquity; moreover, the beasts and creatures, which the prayers and spells were intended to frighten away from the dead man, belong to the period when forests clothed the banks of the Nile in Egypt and river monsters of all kinds abounded which are now only to be found on the upper reaches of the Blue Nile and near the Great Lakes.

In his introduction, Dr. Budge has brought together some exceedingly interesting evidence that parts of the "Book of the Dead" were in general use even before the period of the kings of the first dynasty; but what concerns us here is, not the early history of the book, but the traces which its early history has left upon it, and which have been retained even in its most perfect and complete form, the so-called "Theban version," which is found written upon papyri in tombs of the eighteenth, nineteenth and twentieth dynasties. The Egyptian was conservative to the backbone, and to this conservatism the anthropologist and the scientific student of religion are much indebted; for as he advanced in his religious beliefs and conceptions, he did not discard all traces of his earlier and more primitive state, but along with the profession of his more spiritual faith he jealously clung to and retained the earlier spells and formulæ which had long ceased to apply to his own condition of life. It is thus possible in the "Book of the Dead" to trace the semi-barbarous North-African element contending with more moral and spiritual beliefs, the rise of which Dr. Budge traces to the presence of some Proto-Asiatic element in the composition of the Egyptian race. The space at our disposal does not admit of our treating this fascinating subject at greater length, and for a more detailed discussion we must refer the reader to Dr. Budge's introduction.

We have already made a brief reference to one of the most striking characteristics of this latest edition of the "Book of the Dead"—the beautiful series of outline blocks with which the chapters are illustrated. The ancient Egyptian scribes and artists used to add to the separate chapters or sections of the work vignettes, or pictures, intended to illustrate their general contents and also to have in themselves a magical effect upon the destinies of the deceased; and these pictures are often of considerable assistance in the interpretation of the texts to which they refer. Dr. Budge has selected the vignettes from the best papyri, and where the designs vary in different papyri he has given more than one version; as interesting examples of varying treatment we may refer to the three vignettes illustrating the "Weighing of the Heart" (p. 31 f.), the numerous illustrations to chapter xvii. and the curious variant to the vignettes of chapter xxxvi. This last chapter ensures the driving away of the insect called *Apshait*, which Dr. Budge identifies with

"the beetle which is often found crushed between the bandages of poorly made mummies or even inside the body itself, where it has forced its way in search of food."

Thus, in most vignettes to this chapter the deceased is represented spearing a beetle, as in those illustrated on p. 161; but in the vignette on p. 162 the deceased is portrayed spearing a pig and not a beetle, which the translator ingeniously explains as due to the scribe having confused the proper name *Apshait* with *shaâ*, the word for "pig." The vignettes throughout the

volume have been faithfully drawn from the originals in bold, clear outline, and, apart from the light they throw upon the text, they form in themselves a beautiful series of examples of Egyptian design and draughtsmanship.

In conclusion, we may say that we heartily endorse the remarks which are made in the preface with regard to the fashion that has grown up among certain writers on Egyptology during the last few years, who decry the "Book of the Dead" and announce as a great discovery that parts of its text are corrupt. But, as Dr. Budge remarks, this fact has been well known to Egyptologists for the last fifty years, and is, moreover, a characteristic shared by every great national religious composition which is handed down first by oral tradition and secondly by copies which are multiplied by professional scribes.

"The more the 'Book of the Dead' is read and examined," he adds, "the better chance there is of its difficult allusions being explained and its dark passages made clear, and this much-to-be-desired result can only be brought about by the study, and not by the condemnation, of its texts."

To this end no other scholar has contributed so much as Dr. Budge himself, and his latest efforts, embodied in the volumes before us, will place a rich store of material within the reach of the humblest worker in the great field of the comparative study of religions.

FOSSIL FISHES IN THE BRITISH MUSEUM.

Catalogue of Fossil Fishes in the British Museum (Natural History). Part iv. By Arthur Smith Woodward, LL.D., F.R.S., F.G.S. Pp. xxxviii + 636, 22 figures, 16 plates. (London: Printed by order of the Trustees, 1901.)

THE fourth volume of this great work, which has just appeared after an interval of six years since the publication of the third volume, completes the account of the unrivalled collection of fossil fishes preserved in the national museum, to which the author has devoted so much attention during the twenty years which have preceded his appointment to the post of keeper of the geological department, on the retirement of Dr. Henry Woodward. The issue of this volume, dealing entirely with the Teleosts, was eagerly awaited, not only by palæontologists, but also by all students of fishes, as great hopes were entertained that a revised arrangement of the bony fishes, the preponderating element in the recent fauna, would result in very considerable progress in our understanding of the inter-relations of the components of this difficult group.

If the feeling of joy be mixed with some disappointment at so many problems of classification remaining unsolved, the fault rests entirely with the nature of the material with which Dr. Woodward has had to deal. Those who merely glance over the beautiful series of fish-remains exhibited in the gallery at South Kensington are apt to carry away too sanguine an impression of the osteological information which is to be obtained from their study. It is a fact that, on some very essential points, fossil remains, however numerous and well preserved they may appear, still fail to afford the information which is most wanted. As an example we would allude

to the regrettable fact that the author has been obliged to abandon the use of a very important character in the definition of the higher groups, viz. the presence or absence of the mesocoracoid or "precoracoid" arch, the presence of which in the Isospondyli as understood by Cope had been duly emphasised in the diagnosis of this suborder at the end of the preceding volume. The Isospondyli are now made to include the Haplomi, an innovation with which the reviewer is unable to agree for the reason that the study of recent fishes proves their separation to be absolutely necessary. Even where the character of the "precoracoid process" is appealed to for the definition of families, error has crept in, at least in the case of the Goniorhynchidae, which are stated to be devoid of it, and hence are unjustifiably regarded as "only slightly modified Scopelids." Other points in the identification of the elements of the pectoral arch seem in need of revision, as in the *Thrissopater* figured on plate vii., where the bone named "postclavicle" either represents the supraclavicle or overlies the latter and the clavicle, in which latter case it does not, as I believe, answer to the definition of the Elopidae, and in the restoration of *Eurypholis boissieri*, p. 206, where the basalia of the pectoral fin are represented as attached to a bone termed "postclavicle." In the definition of the Apodes, "pectoral fin with more than five basalia" is true of *Anguilla*, but does not apply to *Conger* and other genera.

It is clearly often impossible to assign extinct fish-remains to their systematic position with that rigid precision which may be attempted in the case of living forms. Dr. Woodward, as he tells us in the introduction, has therefore deemed it advisable to adopt a broad conception of families and genera more in accordance with that of Dr. Günther than with that of later writers. But his classification, on the whole, is greatly ahead of that followed in Zittel's manual and in the text-books published in this country. He has amply availed himself of the reforms introduced by Cope and by Sagemehl. The arrangement of the great group of Acanthopterygians is still the most unsatisfactory, the definition of its subdivisions being of a very provisional nature and lacking in precision; groups like the Beryciformes, Chaetodontiformes and Blenniiformes are certainly quite artificial, and the new sense in which these terms are used must be regarded as a retrograde step. Some explanation might have been given by the author of the reasons that have induced him to place the Blochiidae among the Blenniiformes rather than among the Scombriformes.

The fossil forms dealt with under the Isospondyli offer a highly interesting and suggestive gradation from the later Ganoids to the earlier Acanthopterygians, such as the Berycidae, so abundant in Cretaceous formations, but we are unfortunately still without a clue to the derivation of the eels proper, or Apodes, degenerate fishes which are traced back to the Chalk. Among these, *Urenchelys*, from the Chalk of Mount Lebanon, is shown to differ from existing genera of the same family in having a small caudal fin supported by expanded hypurals, thus showing the "diphycercal" condition which prevails at the present time to have been derived from a "homocercal." The *Percesocine* genus *Cobitopsis* settles once for all the vexed

question of the systematic position of our sand-launce, *Ammodytes*, as it has retained the abdominal pelvic fins which have entirely disappeared in the existing genus; *Ammodytes* must hence be removed from the Ophidiid Anacanthines and placed near the Scombresocids or gar-pike and allies.

The publication of the "British Museum Catalogue of Fossil Fishes" marks a great advance in ichthyology, and we heartily congratulate Dr. Smith Woodward on its completion. It is announced in the preface that the author proposes to prepare, in the course of the present year, a supplement giving a list of additional important genera discovered and published since the earlier volumes were issued, the first dating as far back as 1889; also a stratigraphical table showing the appearance in time of families and genera of fossil fishes, together with a general index to the four volumes.

A last word as to the illustrations. The plates, as well as the outline figures in the text, are excellent, both from the point of view of artistic finish and scientific accuracy, and do the greatest credit to the artist, Miss G. M. Woodward. The intercalation of a collotype plate (xvii.) is, however, to be regretted, as not in keeping with the style of the other illustrations and quite superfluous, the figures having already appeared elsewhere, although no allusion to this is made in the accompanying explanation.

G. A. B.

OUR BOOK SHELF.

Tales of a Dying Race. By Alfred A. Grace. Pp. x+250. (London: Chatto and Windus, 1901.)

THE title of this little book is somewhat misleading. Out of eight-and-twenty tales, only four are, properly speaking, Maori tales. The rest are stories of the contact between the Maories and the white settlers, traders and missionaries. Even the four Maori tales are retold in *pakeha* fashion, until there is little of the Maori left in them beyond the skeleton. The majority have already appeared in antipodean periodicals. They are all charmingly told, and, illustrating as they do many sides of the Maori character and the romance of earlier days of the colony, they form a worthy tribute to the noblest of savages, and cannot fail to rouse vivid feelings of regret that the race is doomed to extinction. Mr. Grace writes of the people and their surroundings with keen sympathy, the full secret of which is not disclosed until the last story, in which he relates an adventure of his early life as a missionary's son, when his mother and her children were rescued from an impending and horrible death by the unflinching courage and fidelity of a native chief. He has done well to preserve the narrative, as well as the other contents of this entertaining book, in a permanent form; but he himself would hardly claim scientific value for the collection.

Lehrbuch der Differentialgleichungen. Von Dr. H. Liebmann. Pp. vi+226. (Leipzig: Veit and Co., 1901.)

THIS interesting and well-written book shows that the ideas of Sophus Lie are at last bearing fruit, even in elementary text-books. There are three chapters dealing respectively with ordinary differential equations of the first order, with similar equations of higher order and systems of such equations, and with partial differential equations of the first order with two independent variables. Besides this, there is an introductory chapter dealing mainly with existence-theorems, and a concluding one on partial differential equations of the second order.